/21 cont./

411 184 there is a Xamatâri poisoned arrow in the possession of the Hamburg Museum für Völkerkunde und Vorgeschichte (Boeldecke Collection, 56.15:7).

411 191 114 [439] Métraux writes with reference to the poisoned arrows: "Poisoned arrows were not so widely used by the Indians as is commonly assumed from the exaggerated accounts of the Spanish conquistadors. Curare, which is the most deadly poison known to the Indians, is prepared by relatively few tribes though it is traded throughout wide regions" /cited in English/ (95). Among

95. Métraux, 1949, p. 242.

Karaiben /Carib/ tribes in Guiana, poisoned arrows which are shot with a bow are not very often encountered, for they are documented only for the Makuxí /Macusi/ by Richard Schomburgk (96) and for

96. Richard Schomburgk, 1847, p. 428.

411 191 the Trio by de Goeje (97). It should be mentioned in this connec-

97. de Goeje, 1906, p. 15; Pl. V, Figs. 10-12; Pl. XI, Fig. 22.

tion, however, that many Karaiben, for example, the Arekuná-Taulipang /Arecuna/, shoot small poisoned arrows with a blowgun; this weapon is unknown to the Surára and Pakidái.

● 278 Arrow poisons:

[192] [184] According to what my Surára informants reported to me, they use three kinds of poison of different strengths, all of which, however, they designate by the general name -- mamokôrimaunápe. This name is almost the same as the one which the Waiká, according to Zerries, use for arrow poison -- mamokordi (98).

98. Zerries, 1956b, p. 151.

Surára
Pakidái
Shiriana

/21 cont./

278 The strongest poison is said to be obtained from the milk of a tree which, in the language of the Surára, is called -- patemá. [824] This tree was not pointed out to me; I was told that it only grows in a very distant region. To prepare an allegedly weaker poison the milk of the -- tototo -- (Strychnos toxifera) is used.

[415] As soon as it is obtained, the particular type of milk is [413] boiled in a clay vessel. This makes it turn black, and subsequently it is painted on the arrow points by means of a wooden stick which [415] is wrapped with cotton. Special bags -- kanabó --, which are made [824] out of the leaves of the acaf palm (Euterpe oleracea Mart.) and sewed with lianas, are used for storing them. There is never anything left of the poison itself.

278 438 I was also told that of the tribes allied with the Xiriána only the Surára were entrusted with the preparation of these two types of poison. All the Indians who were friendly with them, even the Xiriána, thus obtained their poisoned arrows from them by barter. The Surára chief Hewemão, however, emphasized that the detested Waiká also knew how to prepare arrow poisons, which they used [114] above all to shoot at human beings. The latter statement is confirmed by Zerries (99).

99. Zerries, 1956b, p. 151.

278 /22/ The third type of arrow poison is the weakest. It is made out of snuff powder -- epená -- (see pp.190/193, which is mixed with water and boiled. This method is also supposed to be familiar to the Pakidái and Xiriána.

Unfortunately, I could not take part in the preparation of the poisons, for, with the exception of the chief /Fig. 3 appears here/ and his brother, only a few older men are familiar with them and they are kept strictly secret even from all the other members of the tribe. The meager information about them is limited to oral statements.

6: Vinci T-5 (1950) 1959 SQ18 Yanoama SQ18
Sanema

Barbasco is a kind of liana which can grow to impressive dimensions—attaining a stem up to eight inches thick. The Indians cut it in the forest and collect a large pile together at a convenient place for pressing. Their press is made from one of those dead trunks of hardwood which are found in such quantity in the forest and some wooden clubs specially cut for the purpose. The liana stems are pounded and then done up into bundles so that they can be easily taken to the place to be fished, which may be some way off. Here they are immersed several times in the river, releasing a milky juice which gives the water a whitish opalescence. The juice of the liana reduces the air content of the water through oxidization, and the fish very soon come floating up to the surface—asphyxiated but not poisoned.

This procedure is a very common one among the Indians, whose fishing follows a two-year cycle—this being the minimum time needed for each stretch of water to become repopulated after the use of barbasco. It goes without saying that this extract of liana loses its efficacy in anything bigger than a small stream. Nevertheless, in times of scarcity the Indians will attempt to fish medium-sized rivers in this way, banding together to collect huge quantities of liana. The fish taken are then smoked and wrapped in banana leaves, after which they will keep for months.

Anai and his men had to go far afield with their barbasco before they found a suitable place. The probability was that the Shirians had already been at work, unknown to anyone, near the source of the Canaracuni. We therefore left him to it after all, and returned to camp early one morning, just in time to meet the plane that was circling the field.

VI

On Sunday, the 24th June, a big plane came into sight over the rim of the Sarisariñama mountains—towards the east where they merge into the Socsoc range. It swooped down to about three hundred feet and then went off without giving any signal. The excitement among the Indians on the spot—Luis Antonio was one of them and he explained the nature of the machine to his kinsfolk—was doomed to disappointment. And time and again this story of the aeroplane continued to arouse our hopes, only to dampen them once more.

A week later it appeared, at the same time—so suddenly and unexpectedly

/464 cont./

411 The children make small bows, generally for their games, but
857 they also shoot lizards, which are good bait for fishing. These
[824] bows may be made of several types of wood, but rarely of palm.
The bows of the men are always made of palm.

411 Macanas are used by women for fishing. They are also used
[226] by men in their attacks on other settlements with which they have had more or less friendly relations, for the purpose of recovering the wife or daughter held captive there.

[531]

/Fig. 7/

Poisons

278
[226] A variety of poisons for fishing are used by the Guaika /Waica/. One comes from a vine, another from the husk of a prickly nut, and the third from the bark of a certain thick tree.

[411] Arrow points are poisoned with the poison from the bark of a vine. They scrape the bark, and the scrapings, /465/ wrapped in leaves, are kept dry by hanging them over the current of air from a fire until they are needed.

On the day when an Indian is going to prepare poison, every man of the settlement gets ready to prepare a set of arrow points to be poisoned.

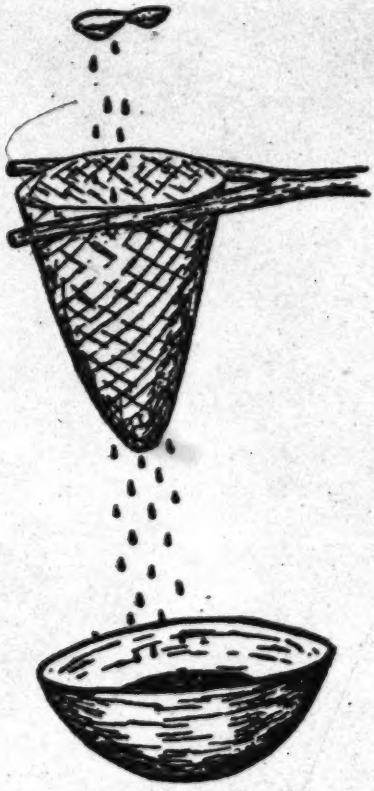
The preparer of the poison begins by pulverizing the scrapings of bark between the palms of his hands. He constantly utters a
[415] series of shouts and grunts while doing this. Then he places the pulverized bark in a funnel made of leaves, into which hot water

/465 cont./

278 [415] is poured, a few drops at a time. The liquid which seeps through is collected in a totuma. Fig. 8 shows the procedure. /466/ Several fires are lighted around, and after a short time the firewood is scattered so that there will be no flames, but only burning embers.

278 411 Then the sets of arrowheads which are to be poisoned are stuck into bundles made of leaves and placed in such a way that the points remain over the embers. The poisonous liquid is then smeared on the points, in small quantities each time, drying immediately. All the poison is smeared on the points on the day it is prepared. The accompanying Fig. 9 /see p. 37/ shows the procedure. /Fig. 9 appears here./

278 415



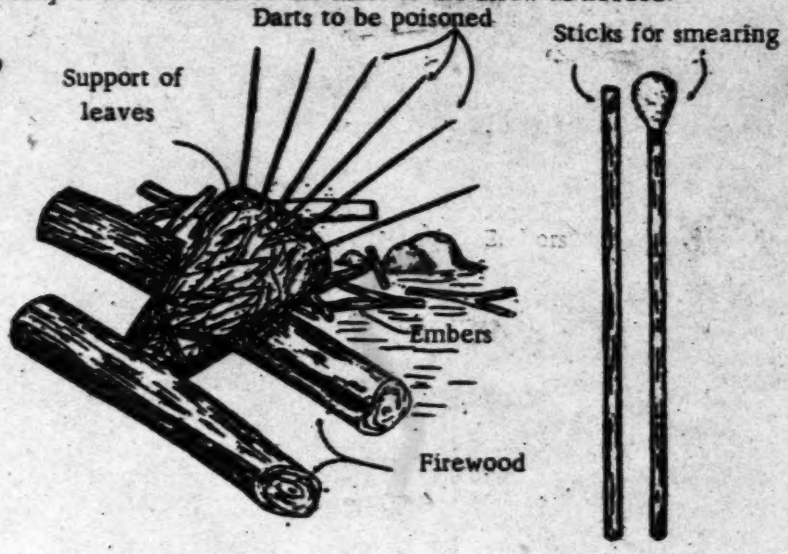
/Fig. 8/

/466 cont./

278 411 Some of the sticks used for applying the poison to the arrow-heads are of palm and have a hole near one of the ends for holding poison. Others have a wad of cotton or of any absorbent material tied to the end in order to be saturated with the poison.

411 When the poison has dried on the arrow points, the latter are kept in the quiver, which consists of a bamboo tube, always ready to be attached to the shaft of the arrow as needed.

278 411



/Fig. 9/

11: Chagnon E-5 (1964-1968) 1968 SQ18 Yanoama SQ18

black, heavy, and very brittle. It breaks easily, but the pieces are used by the men as grinding surfaces for their drug manufacture, or as baking dishes when the women make cassava bread. As we shall see below, only a few villages make the clay pots and trade them to the members of other groups.

The most distinctive feature of Yąnomamö technology is that it is very direct.[4] No tool or technique is complicated enough to require specialized labor or raw materials. Each village, therefore, can produce every item of material culture it requires from the jungle resources immediately around it. That is, the simplicity of the tools, the processes of manufacture, and the distribution of resources are such that each village can exist independently of its neighbors as far as technological requirements are concerned. Nevertheless, some specialization in trade and manufacturing does occur, but it seems to be more closely related to the development of political alliances and is therefore discussed in a later chapter. I will describe the material culture at this point and relate it to the over-all adaptation later in this and following chapters.

WEAPONS Wood for bows is obtained from two species of palm tree, one that grows wild and one that is cultivated.[5] The bow is very heavy because palm wood is extremely dense. One cannot, for example, drive a nail into palm wood. The fibers that go into the thick bowstring come from the inner bark of a tree; these are twisted into a cord by rolling them with the palm of the hand against the thigh. The cord is so strong when it is new that it can be used as a hammock rope, but it deteriorates with age and must be replaced periodically. The bow itself is shaped with the lower jaw of a large, wild pig. The canine teeth in the pig's lower mandible are worn to razor-sharp edges by chewing and make magnificent cutting tools; the bow stave is held vertically and the mandible is planed up and down the surface, each upward stroke shaving off a fine layer of wood. After much labor and patience, the bow is completed. It has a circular or oval cross section and is very difficult to draw. Most Yąnomamö bows would compare favorably to our best hunting bows in strength.

Palm wood is also used for one type of arrow point. A splinter of palm wood about 15 inches long is smoothed down to a fine point, and several lateral grooves are cut into it along its length. This is done so that the point will break off in the body of the target. This type of point is covered with curare poison, which slowly dissolves in the animal (or man) after the point has broken off. This point is used most frequently for monkey hunting, as monkeys tend to grab hold of branches and tree trunks when they are wounded. The curare relaxes their muscles, and the monkeys sooner or later fall to the ground. Unless the point were coated with curare, the animal might die high in the treetops and could not be easily recovered. The Yąnomamö also carry large supplies of extra palm points in their bamboo quivers since these points break whether or not the arrow strikes the intended target. This type of point is manufactured in large quantities in several villages and is traded to other groups.

The curare vine is also collected wild from the jungle. It is soaked in hot water to leach out the active ingredient. The water containing the poison is then painted onto the palm-wood points over glowing coals; the water evaporates, leaving a brown, sticky

[4]For more details on Yąnomamö material culture than are given here, see Becher (1960) and Zerries (1964).

[5]The cultivated palm, *pijiguao*, produces a desirable fruit. It is cultivated for the fruit, but the wood of dead palms is used in bow manufacturing.

278 layer of poison. Sometimes other ingredients are added to the poison to make it stickier and less soluble. Without these ingredients, the poison would be washed off by the rain. As an extra precaution against this, some men wrap a leaf around the curare point after it has been attached to the arrow.

415 411 [824] [438] [239] Arrow-point quivers are made from 2-inch bamboo sections of about 18 inches. The quiver is essentially a tube of wood with a natural joint serving as the bottom of the case. The bamboo grows wild in large stands, and some villages specialize in collecting it, making quivers, and trading them to other groups. A piece of monkey, snake, or jaguar skin, molded to fit over the top prevents water from getting into the tube. It usually contains a dozen or so extra arrow points, fibers for fastening the points to the arrow shaft, a ball of resin used as adhesive, a few splinters of bone used to tip one kind of arrow point, and, occasionally, a magical charm. A fiber or cotton string is tied around the bamboo tube near its top, and a loop is fashioned so that the tube can be worn around the neck. It hangs down the middle of the back.

372 [824] The Yąnomamö attach their fire drills and a pair of agouti-tooth knives to the outside of the bamboo quiver. The fire drill is made from the wood of the cocoa tree and consists of one or two 20-inch long, slender shafts, circular in cross section, and a 12-inch long lanceolate-shaped piece of cocoa wood into which have been worn several holes. The latter piece of wood is placed on the ground and held firmly in place by the foot. The tip of the slender shaft is placed into one of the holes, and the shaft is twirled rapidly with the palm of the hands; the heat of the friction ignites the wood dust that results from the spinning tip, and this is immediately transferred to some cotton tinder. The men usually work in pairs to start a fire, as the dust cools off by the time a single man can get his hands back up to the top of the slender shaft to begin another downward twirling motion.

412 [237] The agouti-tooth knives are manufactured from the lower incisor of the agouti rodent. The incisors are long, slender, gently curved, and very sharp. The tip of the incisor is shaped like a wedge and is frequently indented. The exterior part of the tooth is much harder than the pith so that a very sharp edge protrudes slightly above the softer, decayed dentine. The Yąnomamö keep the dentine worn down by periodically "sharpening" the tooth; this is accomplished by cutting into a particular kind of reed, which apparently contains a corrosive ingredient that attacks the dentine but does not affect the enamel of the tooth. The base of the tooth is fastened in a short piece of wood [314] by a resin adhesive and a fiber wrapping. The completed knife is as sharp as any steel [284] chisel, but because of its small size, its usefulness is limited. It is primarily used to whittle lanceolate arrow points from bamboo, a very time-consuming job.

226 The jungle also provides another kind of poison used by the Yąnomamö to kill fish. The men select a small stream, dam it up, and put the juice of a vine into the water. This stuns the small fish, which then float to the surface where they are scooped up by the women either by handfuls or with loosely woven, shallow baskets (see Fig. 2-2). If the woman is in the middle of the stream, she empties the contents of her basket into her hand and then stores the handful of squirming fish in her mouth until both the basket and her mouth are full. If larger fish are caught, the women bite them behind their heads to kill them and toss them out on the bank. The first one in the stream takes a chance on locating an electric eel; if she is shocked, the others try to locate the eel with sticks and kill it.